

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/971,777	SILVERMAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael N. Opsasnick	2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to June 14<sup>th</sup>, 2006.
2.  The allowed claim(s) is/are 1.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
|--|--|

MICHAEL N. OPSASNICK  
  
 P. Examiner

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claim 1 is allowed over the prior art of record.
2. The following is an examiner's statement of reasons for allowance:

As per independent claim 1, the claim recitations pertaining to the detailed calculation of removing unvoiced/silence segments and performing peak analysis on two consecutive voiced segments, along with pulse peak detection of the series of voice frames (with the unvoiced speech and silence periods removed), is not explicitly taught by the prior art of record.

Furthermore, it would not have been obvious to one of ordinary skill in the art of speech analysis based emotional detection to modify the teachings of the prior art of record to obtain the recited limitations of claim 1, as noted above.

With respect to the prior art of record, representative art analyzing speech as an indicator of suicide/depression is shown in France et al ("Acoustical Properties of Speech as Indicators of Depression and Suicidal Risk", IEEE Transactions on Biomedical Engineering, vol. 47 No. 7, July 2000, pp 829-837), wherein the analysis of acoustical speech fluctuations associated with fundamental frequencies, amplitude modulation, formant structure, pause frequency and duration are well known in the art (pp 830, col. 1). Furthermore, in France et al, pauses in speech were removed for the convenience of processing continuous speech (pp 832, col. 2). The particular technique in analyzing the formants is shown on page 833, col. 1 of France et al, wherein

Art Unit: 2626

formant ratios are calculated to make an assessment of the state of the person. However, the claim recitations in claim 1, pertaining to the removal of unvoiced speech segments, along with the detailed claimed calculation of two consecutive voiced segments (equations found on pages 15-17 of applicants specification) is not explicitly taught by France et al (“Acoustical Properties of Speech as Indicators of Depression.....”). With respect to the aspect of performing voiced/unvoiced/silence speech decisions, a typical reference using wavelets in the analysis of speech is shown in Shubha et al (“Application of the Wavelet.....”, IEEE Transactions on Information Theory, vol. 38 No. 2, March 1992, pp 917-924). Shubha et al (“Application of the Wavelet.....”) teaches the use of dyadic wavelet transform to determine voiced/unvoiced/silence decisions (page 918, col. 1-2), pp 919 last 2 paragraphs). However, the Shubha et al (“Application of the Wavelet.....”) reference, alone or in combination with France et al (“Acoustical Properties of Speech as Indicators of Depression and Suicidal Risk”) fails to teach using the maximum energy scale to perform voice/unvoiced/silence decisions (as claimed in claim 1) and using the voiced decision (based on these energy scales as claimed in claim 1) as eligible segments to determine suicidal risk.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

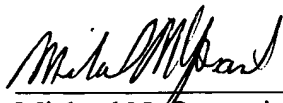
**Conclusion**

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Richemond Dorvil, can be reached at (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno  
7/10/2006

  
Michael N. Opsasnick  
Examiner  
Art Unit 2626